

Amendment and Response

Dkt. 7164.01

an at least one deposition domain deposited on said surface, said deposition domain being smaller than one micron in total area and deposited at a known location on the surface, the deposition domain including a long chain biomolecular deposition material having the capacity to bind the target material.

19 ~~21~~ 21. (New) The array of claim ~~76~~ 76 wherein the deposition material is a protein

20 ~~22~~ 22. (New) The array of claim ~~76~~ 76 wherein the deposition material is an antibody.

21 ~~23~~ 23. (New) The array of claim ~~76~~ 76 wherein the deposition material is a nucleic acid.

22 ~~24~~ 24. (New) The array of claim ~~76~~ 76 wherein the deposition material is a DNA molecule.

23 ~~25~~ 25. (New) The array of claim ~~76~~ 76 wherein the surface is chosen from one or more of the group consisting of a hydrophobic surface and a hydrophilic surface.

24 ~~26~~ 26. (New) The array of claim ~~76~~ 76 wherein the substantially flat surface further comprise a sputter deposited layer of gold thereon, the deposition domain deposited on the gold.

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83. (New) An array of deposition domains for the detection of one or more pre-determined target materials comprising:

a solid glass substrate including a substantially flat surface; and

an at least one domain deposited on the surface of the substrate, each domain being deposited at a known location and being smaller than one micron in area, each domain further including at least one type of molecule with a binding affinity for one or more of the target materials.

25 ~~27~~ 27. (New) The array of claim ~~83~~ 83 wherein the molecule is chosen from one or more of the group consisting of a protein, antibody, nucleic acid, and DNA.

26 ~~28~~ 28. (New) The array of claim ~~83~~ 83 wherein the surface is modified.

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86. (New) A system for the detection of a target sample comprising a molecular deposition probe with an at least one microsphere attached thereto; a substrate including a substantially flat surface; a deposition material for deposition on the surface at a known location using the molecular deposition probe, the deposition material deposited on the surface in a deposition domain less than one micron in area; and a humidity control device.
87. (New) The system of claim 86 wherein the humidity control device controls the humidity around the deposition probe, the substrate, and the deposition material.
88. (New) The system of claim 86 wherein the microsphere is made of non-porous material and is less than 25 microns in diameter.
89. (New) A molecular array for characterizing molecular interaction events, comprising:
- (a) a substrate; and
 - (b) at least one molecular deposition domain on said substrate wherein the spatial address of the domain is less than one micron in area, each domain includes a biologically or chemically based molecule directly deposited on the substrate at a known location, and wherein the molecular deposition domain created by a molecular deposition probe having at least one microsphere attached thereto.
90. (New) The array of claim 89 wherein the substrate is chosen from one or more of the group consisting of mica, glass, silicon, and quartz.
91. (New) A molecular array for characterizing molecular interaction events, comprising:
- (a) a substrate made of mica; and
 - (b) at least one molecular deposition domain on said substrate wherein the spatial address of the domain is less than one micron in area, each domain includes a biologically or chemically based molecule directly deposited on the substrate at a known location, and wherein